Portland Harbor Remedial Investigation Comment Tables

Below are two tables to use for recording your comments on the Portland Harbor Remedial Investigation (RI) report.

- ***Table 1, Comments on Specific Sections or Discussions***, is for specific changes or clarifications to specific elements of the RI – sections, figures, maps, or tables – needed to make these elements correct, consistent, and/or technically appropriate for inclusion in the final RI.
- ***Table 2, General Comments***, is for you to record general questions or issues that concern multiple sections or the report as a whole.

Please follow the instructions given with each table to make the review and finalization of your comments as efficient as possible.

When you have recorded your comments, please return this entire document file to Section Leads. Copy Chip and Eric.

Thanks in advance for your cooperation on this large, complex task.

Please enter your name, initials, and organization below:

Name: Nancy Beckvar

Initials: NB

Organization: NOAA

Table 1: Comments on Specific Sections or Discussions

Document	Subsection	pdf Page #	Comment to LWG	Code
Draft RI text Appendix G (2009-08-19_DRAFT_ BERA_0.pdf)				
	Executive Summary	ES-3	Discussion should not be biased to only explain uncertainties due to "conservatism". All factors that influence uncertainty should be included. For example, some contaminants (e.g. dioxins) may not have been identified as COCs and may be causing risk. Sampling and/or compositing approach may have diluted/biased concentrations such that risk was not captured.	
	4.1.2	78	Footnote 9 indicates that carp were collected beyond the boundary of site and composited with carp collected within the site bounds – did these carp have lower concentrations than carp collected only within site bounds?	Clarify effect of this action
		82	Please explain what % size difference was acceptable for compositing and whether genders were mixed.	Clarify
	6.5.3 6.6.6	177 208 495	LWG calculates and uses alternative AWQC for both PCBs and DDTs. For PCBs no data are provided to evaluate their derived number. For DDT LWG uses an incorrectly calculated alternative to the DDX AWQC for their risk determination. They state on p 208 "A tissue-residue-derived water TRV of 0.011 µg/L DDx compounds was calculated by dividing the **PCB** 10th percentile fish tissue residue LOAEL (1.6 mg/kg ww) by a BAF of 142,960[51] (derived from the DDT AWQC document). This alternative	Fix the water DDX TRV using the correct lipid value from the AWQC document and the corrected tissue

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			water TRV (0.011µg/L) is lower than the final acute value (1.1 µg/L) divided by the ACR (65) and is more appropriate than the AWQC for DDx for evaluating direct exposure of organisms to water." They calculate a new number because the AWQC was derived for protecting pelicans, however, they then incorrectly use the lipid number for the pelican (8%) for anchovy) to make their calculation. The correct lipid value to use is the average freshwater lipid value in the AWQC document - 15% on page B-43 of the AWQC document. Using this number results in a water TRV of 0.0059 µg/L instead of 0.011 µg/L. However the correct tissue TRV for DDT needs to be used so the final corrected water TRV will be lower than 0.0059 µg/L (or about 0.0025 µg/L using originally derived 10th percentile tissue DDX TRV of 0.68 mg/kg).	TRV. Provide the detailed data for how the PCB aquatic TRV were developed so number can be evaluated.
		209	Risks posed by TZW should be identified, even if overlap occurs with other lines of evidence. It needs to be clear that these areas show risk via multiple lines of evidence. HQs for TZW and DDX need to be recalculated using corrected DDX benchmark.	Clarify
		211	Water TRV exceedances should be displayed on maps. LWG states that "Water TRV exceedances were not displayed on maps but were considered along with sediment SQG and tissue TRV exceedances; they were found to co-occur with SQG exceedances."	Display on map
	7.0	235-	The following parameters are very important variables for the dietary	Clarify

Document	Subsection	pdf Page #	Comment to LWG	Code
		236	exposure levels –feeding rates, foraging areas, and prey home ranges, and diet composition for each species. Was a sensitivity analysis done for the key variables? How were the key variables or ranges decided upon? It would have been helpful to provide some ranges for these values to help understand how sensitive these parameters were to the calculations and present a range.	
	7.1.2.1	242	Table 7-3 presents the exposure area assumptions for different fish species. In the bioaccumulation modeling report (p. 14) the following is stated about smallmouth bass home range "Most smallmouth bass stayed within 0.4 km (0.25 mile) of their release points in the 1-month post-release period." Please explain why 1 mile was then chosen as the exposure scale for this species. What is the effect of using a larger exposure area than actually used by the fish species?	Clarify
	7.1.3	249	Table 7-6. Uncertainties listed in this table discuss bias in one direction only, either present bias in both directions or delete this table.	Clarify or delete table
	7.1.4	251-252	Table 7-7- Present the actual values (range) for the HQs instead of an X which is meaningless.	Add data to table
	7.1.4.2.2	258-259	Tables 7-10 & 7-11 - was there any effect from using different 1 mile sections of the river than the set of river miles used? (e.g. RM 2.5-3.5 was used, but what if RM 2.0 – 3.0 had been used instead?)	Clarify
	7.1.4.3.2	265	Agree with statement that Hg is regional issue. But local sources and	

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			effects from local sources still need evaluation. The highest sediment Hg concentration (≈72 ppm) indicates a local source.	
	7.2.2.3.1	277	Table 7-18 states that fish body wt was based on field-collected data. The size of field-collected fish may be related to the method of collection and not represent the local population. Please explain what the effect of using different fish weights would be. Present the results including a range of sizes to capture the influence of this parameter.	Clarify
	7.2.4.1	287	Step 2 - Did they intend to refer the reader to Table 7-17 instead of Table 7-15?	Fix
	11.2	511	Remove this statement unless local vs regional risk was specifically assessed "Although risk estimates indicate the potential for unacceptable risks in the Study Area, some risks are associated with regional rather than Study-Area-specific contamination."	
	11.3	511-512	This statement is speculative and not supported by any information – "Unacceptable risks to other fish, wildlife, amphibians and plants associated with PCBs and other COCs (Table 11-2) would be reduced or eliminated by sediment remedies that address mink PCB risks."	
Attachment 2			"Tissue chemistry data are also available for a limited number of epibenthic invertebrate samples collected from Hester-Dendy multiplate samplers placed in the Willamette River. Measured epibenthic invertebrate tissue residue	clarify

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			concentrations will be compared to tissue TRVs or invertebrate-specific tissue TRVs as described above." It appears that PAHs and a number of other compounds were not analyzed in these samples, please explain why they were not and what the decision to include or exclude chemicals for analysis was based on.	
Attachment 4_WW	All Tables		Make clear which species have measured whole body concentrations and which have calculated whole-body.	Clarify
Attachment 4_WW	Table 3-5	8	Pesticide values were adjusted for steady state, so it's not clear if the min and max detected concentrations presented in the table are the actual measured concentrations or the adjusted concentrations.	Clarify
Attachment 4_WW	Table 5-1 Table 6-1		Please indicate which chemicals the Superscript **a** in the table legend refers to for adjusted steady-state values.	clarify
Attachment 4_WW	Table 5-1 Table 6-1		Were non-detected or estimated samples (J) also adjusted for steady state? Please explain.	clarify
Attachment _3_WW	Table 5-1		The process in McFarland (1995) is used to adjust tissue concentrations in clams and worms to steady state concentrations. However, it appears that for the Kow in the equation they use a variety of sources including EPI Suite 2007, McFarland, and for PCBs, Hawker & Connell 1988 is used. While there are a range of Kow's available for any one compound, the reason for selecting a specific Kow is not clear. There is uncertainty with the Kow's selected and therefore steady state residue calculations are also uncertain. The uncertainty and direction of bias resulting from the selected Kow is not stated in the text. Was the Kow	

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			selected at the mid-range of possible values, or did they use an extreme value from the range? Please answer - What decision was made and why for choosing Kow, and how did it effect the steady-state concentrations?	
Attachment 12			3.1.1 PCBs are not a COPC for largescale sucker in this attachment? Attachment is inconsistent with main document. In Table 7-1 of the main document, PCBs are listed as a Fish tissue COC for largescale sucker.	Fix
			Why were all fish toxaphene data below detection, up to a high concentration of 6.9 p pm? Same for sediment concentrations that were non-detect at 380 ppm.	Clarify

Completing Table 2

This table is for recording general comments that concern entire sections or multiple RI elements (sections, figures, maps, or tables). Please state as specifically as you can what your concern is and what needs to occur to resolve it.

Table 2: General Comments

Initials	Section	Comment
Draft RI text Appendix G (2009-08-9_DRAFT _BERA_0.pdf))		This document should be a scientific data report and evaluation but many, many instances of bias in interpretation occur throughout and need to be removed. In addition, there are many cases throughout the document where statements are made and no supporting documentation is provided. References need to be added to support scientific statements.
		Fish were assessed based on risk from individual contaminants yet they are exposed to a complex mixture. Some of the mixture is composed of COC's and some of the mixture also consists of chemicals that were not identified as COCs but may contribute to toxicity. Additivity of individual contaminant risk is a reasonable assumption, especially for chemicals acting via the same mode of action. HQs for individual compounds should have been summed to assess risk from multiple contaminants. Therefore, risk based on individual contaminants greatly underestimates actual risk therefore all the fish risk is underestimated and not discussed as part of the uncertainty.
	343	None of the listed uncertainties address concerns about the adequacy of the data collected as part of the RI, and how effectively the PH area was characterized. Sampling is an important part of the uncertainty that is not addressed and should be included in this section. Once again, the bias is in one direction and not a scientifically reasoned evaluation of all the uncertainties.
	Table 6-16	Benthic TBT TRV comparison to fish TRV is not appropriate; remove this text under key uncertainties.
	Table 7-5, p. 247	For the final version of this document, LWG made some changes to the fish tissue DDX raw data used that changed the previously derived DDX tissue TRVs. LWG took advantage of the impact that changing a low residue-effect concentration has on the derived TRV. For example, for fish, EPA recommended they use a LOER of 1.1 mg/kg from the Allison et al. (1963) study where a range of residues were reported. Since tissue concentrations varied during the study, there is no way to know at what tissue concentration the toxicity effect threshold was exceeded. The conservative approach is to take the lowest number in the range

		to represent the residue causing an effect. This approach was used in the previous version of the TRV derivation. The least conservative approach is to take the highest concentration at the time of an effect. LWG used the least conservative approach by selecting the highest residue in the time frame where mortality became significant. By switching to this higher concentration (3.0 mg/kg from 1.1 mg/kg, see page 14 in Attachment 9), the tissue TRV increased significantly (to 1.6 mg/kg ww) from the one originally calculated (0.68 mg/kg). Given that the endpoint is mortality which is a severe endpoint, the lower tissue residue should be selected from this paper. Another approach is to take the median concentration to represent the range of residues experienced by the fish (1.8 mg/kg). This approach would also be better than using the highest value in the range. The original tissue TRV derived for DDx in fish should be used.
	Table 7-40 Risk Conclusions Column p. 351-	Almost all of the statements in the Risk Conclusions columns are biased in one direction and don't consider all sources of potential bias. When HQ>1, this column always states that risk is overestimated. There is uncertainty in both directions at each step in the processes they followed. The authors should either highlight the major uncertainties and direction of bias, if known, for each step or eliminate this column.
	Table 7-40 cont.	The Effects Considerations column frequently contains argument against the conclusion of risk when HQ>1. Remove the text in the The Effects Considerations column for TBT which should not include specific issues with the study. Not enough data are provided to evaluate the study and this is not the place for this discussion. Also remove for PCBs
	Table 7-40 cont.	For TBT risk to Largescale sucker and chinook salmon in particular – risk conclusion should not be no risk. The authors support no risk by saying that the tissue LOE did not support risk. However, the tissue LOE would support risk had they not screened it out as a COPC in the SLERA, several areas of the waterway show concentrations in tissue above risk thresholds.
	Table 7-40 cont.	Under the exposure considerations column they claim that the diets are not representative for the species under consideration. However, the concentrations in other potential food sources may be greater (or less) than the ones analyzed, therefore no data support their "no unacceptable risk" conclusion.
	Table 7-40 cont.	For PCBs in tissue, selected LOAEL is not highly uncertain. Uncertainty is within normal range of uncertainty. Also, no mention is made about how well residue concentrations in PH were characterized for each receptor. There are many uncertainties with the limited residue data available for

		comparison.
	Table 11-2 p.5-14	Although not a NOAA resource, the rationale for eliminating risk of lead to osprey is unsupported by any data. The factors responsible for increasing population size may be entirely unrelated to contamination. One could surmise that the population size increase may have been even higher if contaminants were not present. Please remove this unsupported statement.
	Section 4.1.2	Maps 4-3 to 4-13 don't include a map with locations of Carp samples (On Oversize maps section). Please add missing map.
Attachment 4	Table 3-7	The average TBT worm concentration for detected samples in spreadsheet 4D is 199 μg/kg ww not 119 μg/kg ww as listed in this table. Not clear how replicates, if present, were handled, and if that could explain the different averages. Please make this table consistent with data in spreadsheet.
		The metabolic ratios for DDT in tissue have a high percent of the DDT metabolite or DDD metabolite for some samples, indicating that there are recent sources of DDT into the River. I did not see any discussion about this observation. Please identify areas in the river where sources appear to be recent based on metabolic ratios in fish and in sediment.